

APPENDIX B
CLAIMS WHICH WILL BE PENDING
UPON ENTRY OF THE PRESENT AMENDMENT
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1. A multi-stage data logging system comprising:
 - a) a telecommunications ("telecom") stage receiving input from a plurality of communication channels;
 - b) a recorder stage having one or more recorders, at least one recorder logging data associated with information transmitted on at least one of said plurality of communication channels;
 - c) a distribution stage providing access to data logged in the recorder stage;
 - d) a first interface linking the telecom and the recorder stages and a second interface linking the recorder and the distribution stages;

wherein at least two stages of the system are physically separable and in operation can be located wide distances apart.
 2. The data logging system of claim 1 wherein the telecom stage comprises:
 - a) a first interface capturing signals from said plurality of communication channels;
 - b) one or more signal processors converting captured signals into formatted data; and
 - c) a second interface for transmitting said converted data to said recorder stage.
 3. The data logging system of claim 2 wherein the telecom stage further comprises at least one of: analog to digital signal converter and means for monitoring digital telephones.
 4. The data logging system of claim 2 wherein said one or more data processors provide data compression.
 5. The data logging system of claim 1 wherein the telecom stage provides time stamping of the received input.
 6. The data logging system of claim 1 wherein the telecom stage provides authentication of signals from said plurality of input channels.
 7. The data logging system of claim 2 wherein said one or more data processors encrypt the converted data.

8. The data logging system of claim 1 wherein the recorder stage comprises a controller for directing and monitoring recorder stage operations, and each recorder comprises:

- a) a first interface receiving data from the telecom stage;
- b) a buffer for transitional data storage;
- c) a random access storage device for data storage; and
- d) a second interface for transmitting stored data to the distribution stage.

9. The data logging system of claim 8 wherein the recorder stage still further comprises an archive storage device for archiving data.

10. The data logging system of claim 9 wherein said archive storage device is fixed.

11. The data logging system of claim 9 wherein said archive storage device is a RAID array.

12. The data logging system of claim 9 wherein said archive storage device is removable.

13. The data logging system of claim 1 wherein the distribution stage comprises:

- a) a first interface receiving data from the recorder stage;
- b) a controller for directing and monitoring distribution stage operations;
- c) a buffer for transitional data storage; and
- d) a second interface for distributing data to one or more output channels.

14. The data logging system of claim 1 wherein the distribution stage comprises an archive storage device for archiving data.

15. The data logging system of claim 14 wherein said archive storage device is fixed.

16. The data logging system of claim 14 wherein said archive storage device is a RAID array.

17. The data logging system of claim 14 wherein said archive storage device is removable.

18. The data logging system of claim 1 wherein the distribution stage comprises: an operating system software application and a computer capable of running said software application and accessing one or more remote server computers.

19. The data logging system of claim 18 wherein said computer is connected to said one or more remote server computers via a local area network.

20. The data logging system of claim 18 wherein said computer is connected to said one or more remote server computers via an Internet protocol (I/P) network.

21. The data logging system of claim 1 wherein the recorder stage comprises at least one backup recorder, and the system further comprises means for detecting a malfunction in a recorder of the recorder stage, and means for automatically switching interface links from the detected malfunctioning recorder to said at least one backup recorder.

22. The data logging system of claim 1 wherein at least one of said first and second interfaces is network-based.

23. The data logging system of claim 1 wherein at least one of said first and second interfaces is a four-wire interface.

24. A multi-stage data logging system comprising:

- a) a first means for receiving signals from one or more communication channels;
- b) a second means for logging data associated with received signals;
- c) a third means for retrieving logged data and distributing retrieved data to one or more output channels;

wherein at least two of said first, second, and third means are physically separable and can operate wide distances apart.

25. The data logging system of claim 24 further comprising an archive storage device for archiving data from said one or more communication channels.

26. The data logging system of claim 24 wherein received signals from said one or more communication channels are voice signals, and the second means further comprises means for recording call information about the received voice signals.

27. A data logger, comprising:

a telecommunication device receiving input from a plurality of communication channels;

a processor converting the received input to one or more data formats;

a memory for logging information about the received input, the information comprising data converted to at least one data format;

a communication path to a communications network; and

a server having access to the memory via the communications network for transferring logged data from one or more of said plurality of communication channels via the communications network to at least one remote user.

28. The data logger of claim 27 wherein the server is a Web server and the communications network is the Internet.

29. A method for accessing information in at least one digital logger storing data associated with input from a plurality of communication channels, comprising:

at a Web server having access to said at least one digital logger over a communications network, receiving a request for retrieval of stored data from a user;
retrieving stored data in accordance with the received request; and
transferring the retrieved data to the client.

30. The method of claim 29 wherein the step of retrieving stored data comprises accessing a record of a communication channel made by said at least one digital logger.

31. The method of claim 30 wherein the step of retrieving stored data comprises accessing call information for a record of a communication channel made by said at least one digital logger.

32. The method of claim 30 wherein the step of retrieving stored data comprises providing direct access to a record of a communication channel stored in said at least one digital logger.

33. The method of claim 29 wherein the step of retrieving stored data comprises causing a process to access data stored in said at least one digital logger through a common gate interface.

34. The method of claim 29 wherein the step of retrieving stored data comprises accessing archived data at the Web server corresponding to a record of a communication channel made by said at least one digital logger.

35. A method for operating a multi-stage data logging system having: a telecom stage receiving input from a plurality of channels; a recorder stage having two or more recorders, at least one recorder storing data associated with input received from the plurality of channels and at least one backup recorder; a distribution stage providing access to data stored in the recorder stage; and a first interface linking the telecom and said one or more recorders of the recorder stages and a second interface linking the recorder and the distribution stages; the method comprising:

detecting a malfunctioning recorder in the recorder stage;
automatically switching interface links from the detected malfunctioning recorder to said backup recorder to ensure uninterrupted operation of the system; and
without disrupting the operation of the system replacing the detected malfunctioning recorder with a functioning recorder.

36. A method for increasing the recording capacity of an operating multi-stage data logging system having: a telecom stage having telecom blocks capturing input from at most N input channels; a recorder stage having one or more recorders, said recorders having maximum recording capacity of M ($M \leq N$) channels; a distribution stage providing access to data stored in the recorder stage; a first network-based or four-wire-based interface linking the telecom and the recorder stages; and a second interface linking the recorder and the distribution stages; the method comprising:

(a) without disrupting the operation of the system attaching to said first interface at least one recorder so that the combined capacity of the recorders in the recorder stage is equal to or exceeds N channels.

37. The method of claim 36 further comprising:

(b) without disrupting the operation of the system, attaching to said first interface at least one additional telecom block so that the system can capture $P > N$ input channels; and

(c) repeating step (a) until the combined capacity of the recorders in the recorder stage is equal to or exceeds P channels.

38. The data logging system of claims 1 or 24 wherein linking of at least one of the telecom and recorder stages, and recorder and distribution stages is provided over a communications network.

39. The data logging system of claim 38, wherein the communications network is one or more of: private communication lines, public switched telephone network, corporate intranet, the Internet or a combination thereof.

40. The data logging system of claim 1, wherein the telecom stage comprises at least one of: voltage sensing, current sensing or external signals to trigger recording of data from a communication channel.

41. The data logging system of claim 1, wherein input from the plurality of communication channels comprises one or more of: voice, image or facsimile data types, and said one or more data processors are configured to process said data types.

42. The data logging system of claim 41, wherein output of said one or more data processors is compatible with the G 723.1 or G 722 international voice compression standards.

43. The data logging system of claim 41, wherein said one or more data processors are re-programmable.

44. The data logging system of claim 1, wherein input from different communication channels is stored as a plurality of files having unique record addresses.

45. The data logging system of claim 44, wherein each file has associated call record information.

46. The data logging system of claim 44, wherein the recorder stage is implemented as a server supporting a plurality of file access protocols.

47. The data logging system of claim 8, wherein the random access storage device is a hard disk.

48. The data logging system of claim 1, wherein the distribution stage is implemented as a network server.

49. The data logging system of claim 48, wherein the network server is a Web server.

50. The data logging system of claim 48, wherein the network server is a file server.

51. The data logging system of claim 49, wherein users can access the Web server through a browser.

52. The method of claim 29, wherein the at least one digital logger has a plurality of data records, the records corresponding to information transmitted over a communication channel monitored by said at least one logger.

53. The method of claim 52 further comprising the step of encoding the retrieved data.

54. The system of claim 1, wherein at least two stages are located in different rooms of the same building.

55. The system of claim 1, wherein the recorder stage and the distribution stage are located in different cities.

56. A method for accessing information in a digital logging system storing data associated with input from a plurality of communication channels, comprising:

receiving an information request from a user at a network server having access to a plurality of data records created by the logging system, the records corresponding to data transmitted over a communication channel;

providing to the user a description of services offered by the network server;
receiving at the network server an indication of a service selected by the user;

running at the network server of a software routine causing the server to elicit from the user one or more of the following: user information, user ID, authorization level, password and payment information;

in response to the elicited user data providing access to one or more stored records created by the logging system.

57. The method of claim 56, wherein the stored data records have unique record addresses.

58. The method of claim 56, wherein the network server is a Web server.

59. The method of claim 56, wherein the network server is a file server.

60. The method of claim 58, wherein the user and the Web server communicate through a web browser.

61. The method of claim 58 wherein the step of providing a description of services is performed by causing a home page associated with the logging system to be displayed.

62. The method of claim 56, wherein the step of providing access to one or more records comprises providing record information including one or more of: file name, date created, size of the record, audio type files in use, total associated files, and a command set code.

63. The method of claim 62 further comprising the step of providing the user with instructions for decoding playback software.

64. The method of claim 56, wherein at least some data records created by the logging system are archived at the network server.